

WHAT IS CLAIMED IS:

1. A turbulator with offset louvers for a heat exchanger comprising:

5 a plurality of corrugated fins each having a base extending laterally and longitudinally in a strip; and

a plurality of offset louvers spaced along said base and extending longitudinally and generally perpendicular to said base in an alternating manner, said 10 offset louvers being rolled in a direction parallel to a longitudinal axis of said strip.

2. A turbulator as set forth in claim 1 wherein said offset louvers extend longitudinally a predetermined 15 distance.

3. A turbulator as set forth in claim 1 wherein said offset louvers are spaced laterally a predetermined distance along said base.

20 4. A turbulator as set forth in claim 1 wherein said louvers extend generally perpendicular to said base a predetermined distance.

5. A turbulator as set forth in claim 1 wherein
said offset louvers have a generally inverted "U" cross-
sectional shape.

5 6. A heat exchanger comprising:
a first manifold;
a second manifold spaced from and opposing said
first manifold;
a plurality of tubes extending laterally between
10 and in fluid communication with said first manifold and
said second manifold; and
a plurality of turbulators, each of said
turbulators having a plurality of louvers spaced laterally
and extending longitudinally in an alternating manner, said
15 louvers being rolled in a direction parallel to a
longitudinal axis thereof, one of said turbulators being
disposed in one of said tubes.

7. A heat exchanger as set forth in claim 6
20 wherein said tube comprises a base, a top spaced from and
opposing said base, a first side interposed between said
base and said top along one side thereof, and a second side
interposed between said base and said top along another
side thereof, said base and said top and said first side
25 and said second side forming a channel.

8. A heat exchanger as set forth in claim 7
wherein said turbulator is disposed in said channel.

5 9. A heat exchanger as set forth in claim 6
wherein said turbulator comprises a plurality of corrugated
fins each having a generally planar base extending
longitudinally and said louvers spaced laterally and
extending longitudinally along said base.

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10. A heat exchanger as set forth in claim 9
wherein said louvers extend generally perpendicular to said
base a predetermined distance.

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11. A method of making a turbulator with offset
louvers for a heat exchanger comprising the steps of:
providing a generally planar strip having a base
extending laterally and longitudinally;
forming a plurality of corrugated fins each
20 having having a plurality of offset louvers spaced along
the base and extending generally perpendicular to the base
in an alternating manner such that the offset louvers
extend in a direction parallel to a longitudinal axis of
the strip.

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12. A method as set forth in claim 11 wherein
said step of forming comprises roll forming.

13. A method as set forth in claim 11 including
5 the step of providing a pair of rollers and feeding the
strip in a direction of rotation of the rollers to form the
louvers.

14. A method as set forth in claim 11 wherein
10 said step of forming comprises forming a planar portion
laterally between the louvers.

15. A method as set forth in claim 11 wherein
said step of forming comprises forming the louvers with a
15 generally inverted "U" cross-sectional shape.

16. A method of making a heat exchanger
comprising the steps of:

providing a plurality of tubes;
20 providing a generally planar strip having a base
extending laterally and longitudinally;

forming a plurality of turbulators each having a
plurality of corrugated fins with a plurality of louvers
spaced laterally and extending generally perpendicular in

an alternating manner such that the louvers extend in a direction parallel to a longitudinal axis of the strip; disposing the turbulator in the tube; and brazing the tube and the turbulator together.

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17. A method as set forth in claim 16 wherein said step of forming comprises roll forming.

18. A method as set forth in claim 17 including
10 the step of providing a pair of rollers and feeding the strip in a direction of rotation of the rollers to form the louvers.

19. A method as set forth in claim 17 wherein
15 said step of forming comprises forming a planar portion laterally between the louvers.

20. A method as set forth in claim 17 wherein
said step of forming comprises forming the louvers with a
20 generally inverted "U" cross-sectional shape.